

Bio-Zone

Environmental – Tractor Maintenance Facility

An industrial tractor maintenance facility experienced on-going maintenance problems due to petroleum hydrocarbon accumulation in wash-water coming off heavy industrial equipment during cleaning. The facility had an existing oil absorption system to remove oily waste from the wash water and reuse the reclaimed water for cleaning purposes. The filters plugged regularly and the wash water began to smell. This led to costly filter replacement and laborious maintenance. Osprey Biotechnics set up an on-going biological treatment unit using **Bio-zone** to improve the overall system performance. **Bio-zone** is a naturally occurring, specially cultured bacteria designed to degrade oil, grease and/or other stubborn organic compounds in wash water.

A pilot study was performed at the site. A 55 gallon drum was filled with wash water. A sample was taken for its oil and grease content and sent to an outside-certified laboratory for the analysis. The sample contained **632 ppm** of oil & grease. The pH of the wastewater was adjusted near neutral and the system was inoculated with Bio-zone . A base mount aerator in the drum provided aeration. A sample was taken after 5 days and analyzed for oil and grease concentration. The oil and grease level had dropped to **28.2 ppm**.



After the pilot study, continuous biological treatment was initiated. The wash water for equipment cleaning collects in a sump. The sump has 1000-gallon capacity and is not well mixed. Along with steam cleaning, an alkali detergent is also used (pH 9.0) which increases pH in the system. The water is pumped from the sump into an existing oil-water separator. The separator (tank) has two baffles and three compartments. The oil-water separator had an oil skimmer to skim the oil from the top of the surface. The last compartment has a sump pump that sends the water into a centrifugal separator/filtration unit. The filtration water flows into a holding tank. The water then flows through a steam generator and the steam produced is used for cleaning the equipment again. Make-up water is added into the holding tank as needed. Within 24 hours of the treatment there was no offensive odor. Two samples were taking during successive weeks from the sump and the oil and grease concentration was **65.6 ppm** and **39.2 ppm**. The **Bio-Zone** treatment system significantly reduced the oil content as well as the odor in the system.

The Bio-Zone biological treatment system provides a long term and cost effective solution for the treatment of wash water at industrial equipment washing or truck/car washing facilities.

